

From: Linc Wehrly
To: Chris Nevers; Robert Peavyhouse
Cc: Stephen Healy
Subject: Fw: MY11 GM SCR Inducement Strategy - Final
Date: 05/13/2009 08:32 AM
Attachments: Warning Stgy Summary_090507.pdf

GM sent this to us last Friday.

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Thanks.

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

----- Forwarded by Linc Wehrly/AA/USEPA/US on 05/13/2009 08:27 AM -----

From: andrew.s.barren@gm.com
To: Khesha Reed/DC/USEPA/US@EPA, Gregory Orehowsky/DC/USEPA/US@EPA, Stephen Healy/AA/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA, dnguyen@arb.ca.gov, ychang@arb.ca.gov, Jason Gumbs/DC/USEPA/US@EPA
Cc: randall.c.harvey@gm.com, rob.sutschek@gm.com
Date: 05/08/2009 02:56 PM
Subject: MY11 GM SCR Inducement Strategy - Final

EPA and ARB Staffs,

Based on several discussion with each staff, GM feels it has resolved all the remaining open issues regarding the MY11 heavy duty diesel SCR inducement requirements (based on closure of the final issues below).

CBI / Ex. 4

CBI / Ex. 4

therefore, GM is proceeding with the expectation these final issues meet all of the agency expectations. I'm also including a copy of the presentation material of the SCR inducement strategy.

IF YOU STILL HAVE ISSUES THAT MUST BE RESOLVED, PLEASE PROVIDE THAT FEEDBACK AS SOON AS POSSIBLE.

ARB ISSUES / RESOLUTION:

- ARB asked what constitutes (level change) a fuel fill? ARB indicated that we need to be consistent with the guidance and they expect the % change to be less than 40% (where we are today).

CBI / Ex. 4

CBI / Ex. 4

FINAL RESOLUTION - ARB ACCEPTS STRATEGY FOR MY11.

- ARB indicated they will scrutinize any inducement based on a single sensor (need redundancy or significant robustness). This was highlighted by the vehicle speed sensor. If the vehicle speed sensor is lost, the default would eliminate the vehicle speed inducement (55 mph limit or 5 mph limit). The system needs to have a secondary means to limit speed or torque. After much debate, the team felt this would require a virtual vehicle speed calculation. CBI / Ex. 4 GM

CBI / Ex. 4 - ARB will consider and respond.

FINAL RESOLUTION - CBI / Ex. 4

CBI / Ex. 4

- ARB asked if the "0% pump pressure" referenced in level #9 of the DEF Level strategy was regarding fuel pump pressure. The answer is no, it refers to DEF pump pressure. GM indicated we'd fix the documents to clarify this.

FINAL RESOLUTION - DOCUMENTATION REVISED TO REFLECT ZERO UREA PUMP PRESSURE AT FINAL INDUCEMENT.

- ARB asked if we could meet the EPA guidance for freeze protection, but just at idle. CBI / Ex. 4 (starting with frozen tank, idle 70 minutes, be able to inject urea).

CBI / Ex. 4

CBI / Ex. 4

FINAL RESOLUTION - EPA HAS CONSIDERED AND HAS NOT INDICATED IT'S A PROBLEM.

- ARB feels if a customer has poor quality urea, it's the customers fault. CBI / Ex. 4

CBI / Ex. 4

- ARB's feels any wiring/connector is not tamper resistant, regardless if it takes extraordinary measures to disconnect or cut wires.

FINAL RESOLUTION - NOT REQUIRED.

- ARB will review the complete strategy and provide feedback on what is and is not acceptable (other than noted above).

FINAL RESOLUTION - NO FEEDBACK SINCE APRIL 1, 2009 MEETING

EPA ISSUES / RESOLUTION:

- GM (Barren) needs to supply EPA a clear description of how final inducement is entered for low urea level, with respect to fuel fills. We also need to supply historical background on how GM has arrived at the current fuel fill strategy.

FINAL RESOLUTION - GM SENT RESPONSE/INFORMATION REQUESTED IN SEPARATE EMAIL, CONSIDERED RESOLVED.

- GM (Barren) to provide feedback on how we comply to the guidance requirement to involve 3rd parties on urea infrastructure.

FINAL RESOLUTION - GM OWES EPA FURTHER INFORMATION, BUT THIS ITEM SHOULD NOT HOLD UP PROGRESS ON SCR INDUCEMENT SINCE

CBI / Ex. 4

CBI / Ex. 4

- GM (Barren) will provide a clear chart to EPA on tampering inducement.

FINAL RESOLUTION - THE TAMPERING INDUCEMENT STRATEGY TABLE INCLUDED IN ATTACHED WARNING STRATEGY PRESENTATION, CONSIDERED RESOLVED.

- Cliff Dean of EPA will review GM's request to disable DEF inducement when a frozen tank is detected.

FINAL RESOLUTION - NO FEEDBACK SINCE PREVIOUS MEETING (APRIL 24, 2009), CONSIDERED RESOLVED.

- Greg Orehowsky of EPA to review GM's logic regarding inducement for tampering (GM to supply a clearer chart specific to tampering).

FINAL RESOLUTION - NO FEEDBACK SINCE PREVIOUS MEETING (APRIL 24, 2009), CONSIDERED RESOLVED.

- Greg will also review GM's DEF Quality (% DEF to water) strategy and either approve or provide feedback

FINAL RESOLUTION - NO FEEDBACK SINCE PREVIOUS MEETING (APRIL 24, 2009), CONSIDERED RESOLVED.

This is a very complex issue on an evolving technology. There has been numerous discussions via several independent meetings culminating in our final strategy. GM

CBI / Ex. 4

CBI / Ex. 4

Therefore, I request again - IF YOU STILL HAVE ISSUES THAT MUST BE RESOLVED, PLEASE PROVIDE THAT FEEDBACK AS SOON AS POSSIBLE.

Thank you all for your patience and support.

Andy Barren
General Motors



GM SCR Warning Strategy Summary Attached: Warning Stgy Summary_090507.pdf